



**STATEMENT OF BASIS**  
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BAQ Engineering Services Division

**Company Name:** Union County Regional MSW Landfill (Upstate Landfill)  
**Permit Number:** TV-2180-0031

**Permit Writer:** Jo Anna Cunningham  
**Date:** DRAFT

**DATE APPLICATION RECEIVED:** February 8, 2016

**FACILITY DESCRIPTION**

This facility is a municipal solid waste (MSW) landfill that began accepting waste on January 28, 2002. The Landfill is owned and operated by Republic Services of Kentucky, LLC. The landfill accepts asbestos containing materials and also accepts industrial waste.

**PROJECT DESCRIPTION**

This project is the renewal of the Title V operating permit.

**PROCESS FLOW**

Solid Waste is disposed of at the landfill. As waste decomposes, gases are generated. Emissions consisting of NMOCS, VOCs, HAPs emissions are generated. Landfill gas generation (approximately 75%) is collected by the GCCS and then routed to the open flare. Those emissions which are not readily captured by the GCCS are considered fugitive landfill gas emissions.

**COLLOCATION DETERMINATION**

In 2014 BAQ Permitting, made a determination for Lockhart BioEnergy (TV-2180-0044) and Union County Landfill (TV-2180-0031) based upon the information which was provided in the Lockhart BioEnergy construction application dated May 2014. The Department determined that the facilities are not collocated. This determination is consistent with other landfill gas to energy projects.

**SOURCE TEST REQUIREMENTS**

N/A

**SPECIAL CONDITIONS, MONITORING, LIMITS**

N/A



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**EMISSIONS**

FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
PM	6.69	N/A
PM <sub>10</sub>	6.69	N/A
PM <sub>2.5</sub>	6.69	N/A
SO <sub>2</sub>	25.19	N/A
NO <sub>x</sub>	27.13	N/A
CO	147.60	N/A
VOCs (flare + landfill)	13.85	N/A
NMOCs	138.72	35.50
HCL	3.09	N/A
Toluene	2.42	N/A
Hydrogen Sulfide	4.56	N/A
Methyl Mercaptan	0.0802	N/A
Total HAPs	9.99	N/A

**Sample Calculation - Hazardous Air Pollutants (HAPs)**

1,1,1-trichloroethane Molecular Weight 133.41 g/gmol  
 Concentration = 0.48 ppmv EPA AP-42, Section 2.4, Table 2.4-1

- 1,1,1-trichloroethane = (3,000 ft<sup>3</sup>/min) x (525,600 min/yr) x (m<sup>3</sup>/35.3198 ft<sup>3</sup>) x (0.48 ppmv/1E+06) = 21.43 m<sup>3</sup>/yr
- 1,1,1-trichloroethane = (21.43 m<sup>3</sup>/yr) x [(133.41 g/gmol x 1 atm) / (8.205E-5 m<sup>3</sup>-atm/gmol-K x 1,000 g/kg x (273 + 25 K))]
- 1,1,1-trichloroethane = 116.92 kg/yr
- 1,1,1-trichloroethane (uncontrolled) = (116.92 kg/yr) x (2.2 lb/kg) x (ton/2,000 lb) = 0.13 ton/yr of 1,1,1-trichloroethane emissions generated are sent to the flare
- 1,1,1-trichloroethane (controlled) = 1,1,1-trichloroethane (tons/yr) (uncontrolled) x (1-NCNT)
- NCNT = 98% destruction efficiency for halogen compounds (AP-42 Table 2.4-3)
- 1,1,1-trichloroethane (controlled) = (0.13 tons/yr) x (1- 0.98) = 0.0026 ton/yr 1,1,1-trichloroethane emissions

**OPERATING PERMIT STATUS**

The facility has an effective Title V operating permit which was issued on September 2, 2011.



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**REGULATORY APPLICABILITY REVIEW**

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	Not Applicable - The facility wide potential to emit is less than 250 tons and there have not been any past projects which would trigger PSD.
Standard No. 1	Not Applicable - The processes at the facility do not meet definition of fuel burning source.
Standard No. 3 (state only)	<p>Applicable - The existing flare is an industrial incinerator and is subject to 20% Opacity and 0.5 lb/million BTU PM limit.</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 3, (IX)(D), this facility is exempt from the operator training requirements.</p> <p>The PM performance test requirement has been waived in accordance with Section VIII (A). The testing is waived because the actual flare PM emissions are lower than the regulatory limit.</p> <p>The Standard No. 3, Section V, waste analysis report was submitted to the BAQ Manager of the Technical Management Section on March 5, 2012.</p>
Standard No. 4	The Landfill is subject to the 20% opacity limits. Regarding particulate matter emissions, the facility is subject to Standard No. 4 - Section X - Non-Enclosed Operations.
Standard No. 5	Not Applicable -The facility was not in existence in 1979 or 1980.
Standard No. 5.2	Not Applicable - The flare is functioning solely as a combustion control device and is exempted from this standard per Section I (B)(5).
Standard No. 7	<p>Not Applicable - The Standard Industrial Classification (SIC) code for this facility is 4953. The facility does not fall under the 28 source category (which have 100 tons per year threshold for PSD determination). As such, for PSD applicability determination the facility has the 250 tons per year threshold.</p> <p>The facility's PTE for any pollutant is less than 250 TPY; therefore, the facility is a PSD minor source.</p>
61-62.6	Applicable - The fugitive PM (Dust) emissions are controlled in a manner that should not produce undesirable levels of PM (dust) emissions.
40 CFR 60 and 61-62.60	<ul style="list-style-type: none"> <li>40 CFR 60 Subpart WWW - Standards Of Performance For Municipal Solid Waste Landfills is applicable.</li> <li>40 CFR 60 Subpart XXX - Standards Of Performance For Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, Or Modification After July 17, 2014 - is applicable due to the landfill meeting the definition of modification after July 17, 2014.</li> </ul>



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Regulation	Comments/Periodic Monitoring Requirements
40 CFR 61 and 61-62.61	Applicable - The Landfill accepts asbestos containing materials, therefore it is currently subject to Subpart M - National Emission Standard For Asbestos.
40 CFR 63 and 61-62.63	<ul style="list-style-type: none"><li>Applicable - 40 CFR 63 Subpart AAAAA is applicable. Tier 2 testing conducted in December 2014, indicated that the Landfill exceeded a calculated threshold of 50 Mg/year of NMOCs, therefore Subpart AAAAA is applicable. Note: Subpart AAAAA states that facilities shall comply with 40 CFR 60 Subpart WWW.</li></ul>
61-62.68	Not Applicable - The Landfill does not use or store chemicals subject to 112(r) above the threshold quantities.
40 CFR 64	Not Applicable - There are no applicable emission limits for the pollutants (NMOCs, VOCs, HAPs) which are controlled by the flare therefore, CAM is not applicable.

#### AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This facility has demonstrated compliance through modeling; see modeling summary dated May 17, 2016.
Standard No. 7.c	This facility has demonstrated compliance through modeling; see modeling summary dated May 17, 2016.
Standard No. 8 (state only)	This facility has demonstrated compliance through modeling; see modeling summary dated May 17, 2016.

#### PUBLIC NOTICE

This Title V Permit will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with SC Regulation 61-62.1, Section II.N. This permit was placed in the *Union County News* on December 12, 2016. The comment period was open from December 12, 2016 to January 10, 2017 and was placed on the BAQ website during that time period.

#### ADDITIONAL PUBLIC PARTICIPATION

N/A

#### SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.